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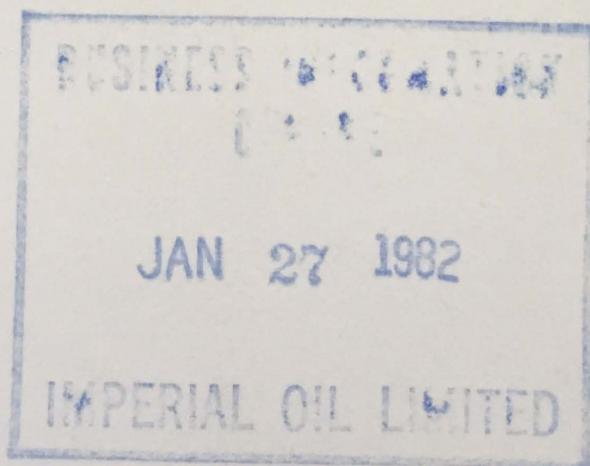
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FINANCES-106-1980

44220



## FACTS & FIGURES



March, 1981

The information contained in this pocket handbook was taken from the annual report, Energy Information Package, and Basic Information Handbook. For more detailed information, consult the sources. All information is accurate to Dec. 31, 1980 unless otherwise indicated. The contents may be used for external communications.

Research & Analysis Division  
External Affairs Department  
Imperial Oil Limited

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## INDEX

|  | Page |
|--|------|
| Chemical — plants                      | 5    |
| — projects                             | 19   |
| Cold Lake                              | 9    |
| Conservation                           | 13   |
| Demand/supply — natural gas            | 15   |
| — oil                                  | 14   |
| Exploration                            | 7    |
| Financial statistics                   | 2    |
| Marketing & distribution statistics    | 5    |
| Mineral projects                       | 20   |
| Operating statistics                   | 4    |
| Payments to Exxon                      | 3    |
| Petroleum products project             | 19   |
| Pipeline systems                       | 6    |
| Prices — Gasoline price components     | 17   |
| — Gasoline price history               | 18   |
| — International gasoline prices        | 18   |
| — World & Canadian crude price history | 16   |
| Products from a barrel of crude        | 6    |
| Refineries                             | 6    |
| Renewable energy                       | 12   |
| Research                               | 11   |
| Reserves                               | 8    |
| Revenue sharing                        | 17   |
| Syncrude                               | 10   |

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# FINANCIAL STATISTICS

(millions of dollars)

|   | 1976 | 1977 | 1978 | 1979 | 1980 |
|---|------|------|------|------|------|
| <b>Operating revenues</b>                       |      |      |      |      |      |
| ● crude oil & natural gas                       | 82   | 104  | 123  | 156  | 542  |
| ● petroleum products                            | 2495 | 2852 | 3308 | 3872 | 4702 |
| ● chemicals                                     | 345  | 406  | 468  | 673  | 788  |
| ● other   | 111  | 117  | 123  | 139  | 178  |
| total   | 3033 | 3479 | 4022 | 4840 | 6210 |
| <b>Expenses</b>                                 |      |      |      |      |      |
| ● purchases of crude oil & products             | 1341 | 1591 | 1970 | 2197 | 2946 |
| ● operating & exploration                       | 430  | 472  | 553  | 853  | 1083 |
| ● marketing & administration                    | 395  | 429  | 476  | 520  | 594  |
| ● taxes   | 323  | 357  | 364  | 345  | 392  |
| ● other   | 131  | 136  | 145  | 188  | 217  |
| total   | 2620 | 2985 | 3508 | 4103 | 5232 |
| <b>Earnings</b>                                 |      |      |      |      |      |
| ● natural resources                             | 177  | 185  | 220  | 215  | 184  |
| ● petroleum products                            | 48   | 76   | 75   | 176  | 310  |
| ● chemicals                                     | 19   | 16   | 20   | 68   | 81   |
| ● other   | 19   | 16   | (1)  | 12   | 26   |
| ● unusual items                                 | —    | —    | —    | 22   | 81   |
| total   | 263  | 293  | 314  | 493  | 682  |
| ● per share (\$)                                | 2.02 | 2.25 | 2.41 | 3.78 | 4.71 |
| ● as % of capital employed                      | 11.5 | 11.6 | 11.4 | 15.2 | 15.7 |
| ● as % of shareholders' equity                  | 16.0 | 16.2 | 15.8 | 21.8 | 21.9 |
| <b>Dividends</b>                                |      |      |      |      |      |
| ● total paid                                    | 106  | 116  | 124  | 150  | 201  |
| ● per share (\$)                                | .816 | .888 | .95  | 1.15 | 1.40 |
| ● as % of earnings                              | 40   | 40   | 39   | 30   | 30   |
| <b>Taxes &amp; royalties</b>                    |      |      |      |      |      |
| ● income taxes                                  |      |      |      |      |      |
| — current                                       | 134  | 220  | 177  | 209  | 356  |
| — deferred                                      | 63   | 30   | 70   | 123  | 136  |
| ● federal sales tax                             | 119  | 146  | 161  | 168  | 211  |
| ● gasoline excise tax                           | 168  | 174  | 164  | 133  | 127  |
| ● other commodity taxes                         | 36   | 37   | 47   | 114  | 277  |
| ● Crown royalties                               | 291  | 355  | 427  | 507  | 513  |
| total   | 811  | 962  | 1046 | 1254 | 1620 |
| ● collected for governments (export & road tax) | 413  | 383  | 362  | 403  | 403  |
| <b>Capital</b>                                  |      |      |      |      |      |
| ● total assets                                  | 3113 | 3385 | 3900 | 4668 | 6244 |
| ● net fixed assets                              | 1814 | 2009 | 2298 | 2688 | 3110 |
| ● working capital                               | 591  | 623  | 542  | 900  | 1985 |
| ● capital employed                              |      |      |      |      |      |
| — natural resources                             | 811  | 1076 | 1245 | 1725 | 2206 |
| — petroleum products                            | 1442 | 1433 | 1524 | 1506 | 1786 |
| — chemicals                                     | 176  | 169  | 196  | 217  | 278  |
| — other   | 109  | 94   | 27   | 303  | 1018 |
| total   | 2538 | 2772 | 2992 | 3751 | 5288 |
| ● reinvestment ratio*                           | 77.4 | 74.9 | 93.9 | 96.9 | 76.4 |

\*capital and exploration expenditures as % of internal cash generation

## Capital & expi

- exploration
- heavy oil
- minerals
- refining & r
- chemicals &
- total

## Shareholder in

- number of s
- shareholder
- in Canada (
- average nur
- shares outs
- shares held
- shares held

## IMPERIAL

### Item

Dividends (net)

Research

Loaned person and technical assistance

NET:

Imperial also im  
1980 imports f



**Capital & exploration expenditures**

|                            |     |     |     |     |     |
|----------------------------|-----|-----|-----|-----|-----|
| ● exploration & production | 134 | 145 | 269 | 625 | 530 |
| ● heavy oil                | 187 | 179 | 138 | 62  | 83  |
| ● minerals                 | 9   | 11  | 22  | 50  | 69  |
| ● refining & marketing     | 49  | 61  | 86  | 102 | 111 |
| ● chemicals & other        | 15  | 16  | 20  | 40  | 68  |
| total                      | 394 | 412 | 535 | 879 | 861 |

**Shareholder information**

|  |         |         |         |         |         |
|--|---------|---------|---------|---------|---------|
| ● number of shareholders                           | 45 807  | 45 985  | 46 962  | 44 188  | 48 442  |
| ● shareholders resident in Canada (%)              | 87      | 88      | 88      | 86      | 85      |
| ● average number of shares outstanding (thousands) | 130 209 | 130 220 | 130 248 | 130 421 | 144 880 |
| ● shares held in Canada (%)                        | 24      | 24      | 24      | 22      | 23      |
| ● shares held by Exxon (%)                         | 70      | 70      | 70      | 70      | 70      |

## IMPERIAL NET PAYMENTS TO EXXON — 1980

| Item                                      | Net Amount       | Description   |
|---|------------------|---|
| Dividends (net)                           | \$126.1 million  | Dividends paid on shares held by Exxon. Tax at 10% was withheld at source and remitted to the federal government. |
| Research                                  | \$ 9.0 million   | Net amount paid to Exxon as Imperial's contribution to Exxon's worldwide research program.                        |
| Loaned personnel and technical assistance | \$ (3.0) million | Net receipt from Exxon for employees on temporary assignment to/from Imperial.                                    |
| NET:                                      | \$132.1 million  |   |

Imperial also imports crude oil and petroleum products. The net cost of 1980 imports from Exxon affiliates was \$691.5 million.



## OPERATING STATISTICS

|   | 1976         | 1977         | 1978         | 1979         | 1980         |
|---|--------------|--------------|--------------|--------------|--------------|
| <b>Number of employees</b>  | <b>14753</b> | <b>14136</b> | <b>14328</b> | <b>14966</b> | <b>16029</b> |
| <b>Exploration &amp; production</b>   |              |              |              |              |              |
| ● net land holdings<br>(millions of hectares)                                 | 20.3         | 16.0         | 12.2         | 11.3         | 10.9         |
| ● net wells drilled   |              |              |              |              |              |
| — exploratory   | 24           | 50           | 101          | 84           | 91           |
| — development   | 33           | 41           | 97           | 140          | 88           |
| ● gross proved reserves   |              |              |              |              |              |
| — crude oil<br>(millions of m <sup>3</sup> )                                  | 175.0        | 165.0        | 217.1        | 200.4        | 198.3        |
| — natural gas<br>(billions of m <sup>3</sup> )                                | 66.8         | 62.1         | 61.2         | 62.0         | 56.7         |
| ● gross production  |              |              |              |              |              |
| — crude oil<br>(thousands of m <sup>3</sup> )                                 | 36.7         | 35.8         | 36.0         | 40.7         | 34.7         |
| — natural gas<br>(millions of m <sup>3</sup> )                                | 9.6          | 9.2          | 8.9          | 9.8          | 8.2          |
| <b>Crude-oil supply &amp; utilization</b><br>(thousands of m <sup>3</sup> /d) |              |              |              |              |              |
| ● supply  |              |              |              |              |              |
| — net production  | 23.0         | 22.1         | 21.9         | 25.4         | 22.1         |
| — domestic purchases  | 20.3         | 26.3         | 28.4         | 31.0         | 32.6         |
| — imported purchases  | 24.0         | 19.2         | 18.9         | 15.2         | 16.4         |
| total processed   | 67.3         | 67.6         | 69.2         | 71.6         | 71.1         |
| ● refinery capacity<br>(Dec. 31)  | 80.9         | 81.2         | 77.9         | 76.8         | 76.7         |
| ● utilization of capacity (%)   | 83           | 83           | 89           | 93           | 93           |
| <b>Sales volumes</b>  |              |              |              |              |              |
| ● petroleum products<br>(thousands of m <sup>3</sup> /d)                      |              |              |              |              |              |
| — gasolines   | 26.1         | 26.0         | 27.2         | 28.0         | 27.8         |
| — middle distillates  | 23.9         | 22.6         | 23.4         | 23.6         | 22.7         |
| — other products  | 20.2         | 20.2         | 20.7         | 22.8         | 20.9         |
| total   | 70.2         | 68.8         | 71.3         | 74.4         | 71.4         |
| ● natural gas<br>(millions of m <sup>3</sup> /d)                              | 10.7         | 10.3         | 9.7          | 10.4         | 8.9          |
| ● chemicals<br>(thousands of tonnes per year)                                 |              |              |              |              |              |
| — petrochemicals  | 777          | 862          | 804          | 1036         | 1043         |
| — fertilizers   | 487          | 609          | 657          | 744          | 711          |
| — building materials  | 455          | 446          | 519          | 506          | 551          |
| total   | 1719         | 1917         | 1980         | 2286         | 2305         |



# MARKETING AND DISTRIBUTION STATISTICS

(31/12/80)

## Associates

|                                |     |
|--------------------------------|-----|
|                                | 37  |
| — marine dealers/agents        | 141 |
| — aviation dealers/agents      | 780 |
| — consumer agents/distributors | 188 |
| — home heat service dealers    | 52  |
| — TBA agents                   |     |

## Facilities

|  |      |
|--|------|
| ● service stations                           | 76   |
| — company owned & operated (Esso)            | 820  |
| — company owned — lessee operated (Esso)     | 136  |
| — Econo, Gain, Champlain                     | 1032 |
| total company owned                          | 3052 |
| — class A — dealer owned and operated (Esso) | 41   |
| — private label                              | 4125 |
| total  |      |
| — included in total                          | 496  |
| — self serve                                 | 46   |
| — Voyageur Restaurants                       |      |
| ● distribution network                       | 69   |
| — terminals                                  | 202  |
| — trucks (owned)                             | 2119 |
| — tank cars (leased)                         | 2    |
| — marine (bulk)                              |      |
| ● marine fleet                               |      |
| (deadweight tonnage)                         |      |
| — Imperial Acadia (10310)                    |      |
| — Imperial Bedford (13980)                   |      |
| — Imperial Dartmouth (2058)                  |      |
| — Imperial Lachine (1243)                    |      |
| — Imperial Nootka (barge)                    |      |
| — Imperial Quebec (6462)                     |      |
| — Imperial Sarnia (6500)                     |      |
| — Imperial Skeena (4856)                     |      |
| — Imperial St. Clair (12707)                 |      |
| — Imperial Tofino (1238)                     |      |

## Market share (%)

|                                 |      |
|---------------------------------|------|
| ● refinery capacity (31/12/79)  | 20.7 |
| ● throughput (31/12/79)         | 23.0 |
| ● sales to customers (31/12/80) | 24.2 |
| — motor gasoline                | 31.7 |
| — aviation fuel (turbo)         | 24.0 |
| — light heating fuel            | 29.0 |
| — diesel fuel                   | 15.7 |
| — heavy fuel                    | 27.2 |
| — asphalts                      | 46.9 |
| — lubricants                    | 24.5 |
| total                           |      |

## Esso Chemical plants

- Dartmouth (heptene plant)
- loco (toluene recovery facilities and varsol plant)
- Redwater (fertilizer complex)
- Sarnia chemical plant (range of primary and intermediate petrochemicals)
- Building Products of Canada plants in Quebec (2), Ontario (3), Manitoba (1), and Alberta (3)



## REFINERIES

| Refinery     | Crude run<br>000 m <sup>3</sup> /d<br>(MB/D) | Capacity<br>000 m <sup>3</sup> /d<br>(MB/D) | 1980<br>%<br>Utilization |
|--------------|--|---|--------------------------|
| IOCO         | 5.9 ( 37)                                    | 6.5 ( 41)                                   | 90                       |
| Norman Wells | .4 ( 3)                                      | .5 ( 3)                                     | 94                       |
| Strathcona   | 24.4 (153)                                   | 24.1 (152)                                  | 100                      |
| Sarnia       | 17.0 (107)                                   | 20.0 (126)                                  | 85                       |
| Montreal     | 11.6 ( 73)                                   | 12.6 ( 79)                                  | 92                       |
| Dartmouth    | 11.8 ( 74)                                   | 13.0 ( 82)                                  | 90                       |
| total        | 71.1 (447)                                   | 76.7 (483)                                  | 93                       |

## PIPELINE SYSTEMS

| Pipeline                       | IOL %<br>Owned | System<br>Length<br>(km) | Diameter<br>(mm) | Capacity<br>(000 m <sup>3</sup> /d) |
|--------------------------------|----------------|--------------------------|------------------|-------------------------------------|
| Alberta Products               | 30.0           | 315                      | 273              | 10.8                                |
| Imperial Pipe Line             | 100.0          | 212                      | 60 to 324        | 23.1                                |
| Interprovincial/<br>Lakehead   | 32.8           | 3967                     | 324 to 1219      | 248.0                               |
| Nisku Products                 | 100.0          | 35                       | 60 to 219        | 4.1                                 |
| Portland/Montreal              | 32.0           | 380                      | 324 to 610       | 46.4                                |
| Quebec South<br>Shore Products | 100.0          | 101                      | 219 + 273        | 5.4                                 |
| Rainbow                        | 33.3           | 769                      | 508 to 610       | 37.4                                |
| Rimbey                         | 2.6            | 105                      | 219              | 6.0                                 |
| Sarnia Products                | 100.0          | 314                      | 168 to 324       | 15.9                                |
| Trans-Mountain                 | 8.6            | 1266                     | 406 to 762       | 51.7                                |
| Winnipeg Pipe Line             | 100.0          | 118                      | 273 + 219        | 6.0/5.6                             |

## PRODUCTS FROM A BARREL OF CRUDE

(based on typical crude — percentages  
can vary considerably depending on type  
of crude processed)

| Product           | Summer | Winter |
|-------------------|--------|--------|
| LPG & butane      | 2%     | 3%     |
| Gasoline          | 39     | 31     |
| Distillates       | 35     | 42     |
| Heavy fuels       | 20     | 20     |
| Refinery fuel gas | 4      | 4      |



## EXPLORATION

### ● Capital and Exploration Expenditures (\$ millions as spent)

|                | 1976 | 1977 | 1978 | 1979 | 1980 |
|----------------|------|------|------|------|------|
| Western Canada | 33   | 36   | 131  | 342  | 321  |
| Frontiers      | 77   | 78   | 49   | 92   | 66   |
| total          | 110  | 114  | 180  | 434  | 387  |

### ● Western Canada

- 1979 Esso participated in 163 wells — 86 gas, 35 oil, 42 dry.
- 1980 Esso participated in 151 wells — 111 gas, 10 oil, 30 dry.
- Canadian Hunter Exploration Ltd. farm-in (1978):
  - 12.5% Esso interest in most Canadian Hunter Elmworth acreage, 17.5% Esso interest in other Canadian Hunter acreage
  - farm-in commitments completed in 1980
  - 271 wells drilled to 31/12/80 — 175 gas, 58 oil, 38 dry.
- Sulpetro Ltd. farm-in (1979):
  - 25% Esso interest in Sulpetro net earnings from production from Elmworth-Wapiti leases
  - 24 wells drilled to 31/12/80 — 20 gas, 4 dry (Canadian Hunter participated in most of these wells).

### ● Atlantic

- 1979 Esso wells Gjoa (Davis Strait) and Gabriel (Flemish Pass) — both dry.
- 1980 no drilling program, undertook 5000 km seismic surveys.
- 1981 extensive seismic program planned, geological and geophysical studies will continue.



- **Arctic Islands**

Arctic Islands Exploration Group (Esso, Panarctic, Gulf, Petro-Canada) farmed-in to Sun Oil and Global Arctic Islands (1976):

- Esso holds 21% of Sun's and Global's varying interests in 8 million hectares
- total farm-in cost \$80 million, Esso share \$28 million
- 10 wells drilled by group to 31/12/80— 3 gas, 1 indicated gas, 1 oil show, 5 dry
- 3 wells being drilled in 1981 — Skate (gas), Cisco, MacLean
- completion of farm-in commitments expected in 1981.

- **Mackenzie Delta/Beaufort Sea**

- since 1964, Esso participated in 77 wells.
- since 1972, 16 artificial islands constructed.
- 1979 Esso wells Adgo (gas), Napartok (dry).
- 1980 Esso wells Mayogiak (dry), Issungnak (oil & gas).
- 1981 Issungnak delineation well being drilled.

- **Reserves (31/12/79)**

CPA estimate of remaining established reserves in Canada:

- crude oil 1082 million cubic metres
- total liquid hydrocarbons 1289 million cubic metres
- natural gas 2496 billion cubic metres.



## **COLD LAKE PROJECT**

(Current work limited pending satisfactory resolution of fiscal terms and project approval.)

### ● **Production and Upgrading**

- Production facility to recover 25 400 m<sup>3</sup>/d raw bitumen from deposits 450 m below surface using steam stimulation.
- 8000 wells to be drilled over project life, twenty or more from a single location with surface clearing less than 15 percent.
- Bitumen will be upgraded into 22 200 m<sup>3</sup>/d of light synthetic crude oil using FLEXICOKING and hydrogen-treating processes.

### ● **Financial**

- Expenditures for project definition, regulatory reviews, process design, and cost estimates 1977 to 1980 about \$115 million.
- Current cost for project engineering, procurement, and construction \$12 billion, including allowance for future inflation.
- Ongoing investment for replacement wells and facilities about \$10 billion over the life of the project.
- Annual operating costs \$400 million.
- Company to finance project from retained earnings and funds borrowed on existing assets; considering associates.

### ● **Employment**

- Total - 8 million engineering manhours, 50 million construction manhours.
- At peak of construction — 6500 manual workers, 3500 supervisors, engineers, and managers.
- 2400 permanent direct jobs, 2400 indirect jobs in Alberta, 1400 indirect jobs in the rest of Canada.



## SYNCRUDE PROJECT

Bitumen is recovered from the Athabasca oil sands using open-pit mines. The bitumen is then upgraded at a plant operated by Syncrude Canada Ltd. (a consortium of eight companies and the Alberta government) near Fort McMurray, Alta.

### ● Participants (%)

- Esso Resources (25)
- Canada-Cities (17.6)
- Gulf Canada Resources (13.4)
- Petro-Canada Exploration (12.0)
- Alberta Energy Co. Ltd. (10.0)
- Alberta government (8.0)
- Hudson's Bay Oil and Gas (5.0)
- Petrofina Canada Exploration (5.0)
- Pan-Canadian Petroleum (4.0).

### ● Plant size

(includes 600 m<sup>3</sup>/d butane)

- initial capacity 17 300 m<sup>3</sup>/d
- debottleneck capacity 20 500 m<sup>3</sup>/d.

### ● Cost

- total \$2.2 billion
- Esso Resources share \$561 million
- associated facilities approx. \$550 million.

### ● Production

- 1978 0.57 million m<sup>3</sup>/yr.
- 1979 2.91 million m<sup>3</sup>/yr.
- 1980 4.70 million m<sup>3</sup>/yr.
- 1981 5.20 million m<sup>3</sup>/yr. (projected).



## RESEARCH

- Research labs in Calgary, Montreal, Sarnia staffed by more than 600 people.
- 1980 expenditures \$46.8 million. In return, Imperial had access to about \$400 million (Cdn.) of Exxon research. Imperial net research payments to Exxon totalled \$9 million.
- Imperial's 1980 research expenditures represented 1.6% of its value added (corporate equivalent of GNP) — more than 5 times Canadian industry average, more than government 1985 target of 1.5% of GNP for research spending in Canada.
- Mutualized research — Imperial has exclusive responsibility for Exxon research into heavy-oil recovery, lubricating-oil processing, polyvinyl-chloride plastics, and lubricating base-oil quality. Imperial also carries out mutualized research in the areas of petroleum products and additive chemicals. For its own operations, Imperial carries out research in conventional oil recovery, petroleum and chemical processing and products, alternative energy sources, and environmental protection.
- Examples of Imperial's research developments:
  - in-situ recovery of heavy oils
  - procedures for construction of drilling islands in Beaufort Sea; technology for forecasting weather, sea state, ice conditions off Canada's east coast
  - Canada's first fuel-economy motor oils and premium unleaded gasolines
  - systems to treat waste effluent in refineries and chemical plants
  - major lubricating oil processes used world-wide.
- 1981 research grants — 98 grants totalling \$600,000 awarded to researchers in 28 universities.



## RENEWABLE ENERGY

- **IOL focus**

- Solar water heating and energy storage.
- Biomass strategy under development.

- **Research program**

- In-house — two-panel solar collector installed in Sarnia facility in 1978 to track the sun.
- Sponsored — University of Calgary to design and monitor solar research facility to be built on top of Esso Plaza 1980/81.
- University grants (\$41,700 for seven grants in 1980); topics — photovoltaics, biomass, storage of heat energy, photochemistry/hydrogen fuel.

- **Demonstration projects**

- Sarnia — four collector panels installed 1979.
- Toronto — commercial installation of 50 collector panels at marketing terminal 1979.

- **Current assessment/direction**

- Economics of active solar systems very poor in Canada — only small chance that solar heating (space or water) will be economically viable in Canada with current technology, without massive government subsidies.
- Imperial solar research program being modified, with greater attention being given to the search for new technology.

- **Financial**

- IOL 1981 budget \$1.2 million.



## CONSERVATION

- 1974 energy-management program introduced.
- \$110 million spent on capital projects in refineries between 1974-80.
- \$25 million budget for conservation programs in 1981.
- 1980 savings (vs 1972) 887 000 m<sup>3</sup> fuel oil equivalent — enough to heat 219 000 Canadian homes.
- **In-house program**
  - speed reductions in trucks and ships
  - heating efficiencies
  - "lights-out" policies
  - smaller fleet cars
  - training and communications.
- **External program**
  - research into energy-efficient products and processing
  - energy-efficient fuels and lubricants (i.e. Uniflo motor oil)
  - new furnaces that reduce heating costs up to 20%
  - service station service specials
  - advertising stresses conservation
  - conservation film prepared
  - participation in federal task forces.



## **OIL DEMAND AND SUPPLY**

(from Imperial 1980 NEB submission)

- September, 1980
  - Canadian oil requirements relatively constant at 300 000 m<sup>3</sup>/d to 1985, declining to 275 000 m<sup>3</sup>/d in 1990, and remaining constant to 2000.
  - Total producibility of crude oil and equivalent from existing fields and the two operating oil-sands plants 250 000 m<sup>3</sup>/d — will decline to 130 000 m<sup>3</sup>/d in 1990 and to 80 000 m<sup>3</sup>/d by 2000.
  - Tertiary recovery and new discoveries will add about 60 000 m<sup>3</sup>/d in the late 1980s and 1990s.
  - Cold Lake and Alsands, together with expanded Great Canadian Oil Sands and Syncrude plants, could result in 83 000 m<sup>3</sup>/d of synthetic crude production by 1990. Additional developments could raise total oil-sands production to 170 000 m<sup>3</sup>/d by 2000.
  - Existing supply will fall 100 000 m<sup>3</sup>/d short of meeting total Canadian demand by 1985. Tertiary recovery, new discoveries, and additional synthetics plants would lower import needs to 80 000 m<sup>3</sup>/d in 1990. Canada could achieve self-sufficiency in the early 1990s with the addition of frontier resources.
- Modified December, 1980
  - Potential effect if NEP not modified:
    - Reduce demand by 15 000 m<sup>3</sup>/d in 1990.
    - Reduce supply by 30 000 m<sup>3</sup>/d in 1985 and by more than 90 000 m<sup>3</sup>/d in 1990.
    - Increase net imports to nearly 100 000 m<sup>3</sup>/d in 1985 and 1990.



## NATURAL-GAS DEMAND AND SUPPLY

(from Imperial 1980 NEB submission)

### ● September, 1980

- Total demand in Canada plus currently authorized exports to increase to 110 billion cubic metres in 1985 and decrease to 75 billion cubic metres in 1990 as current export permits expire. Virtually no growth projected in domestic demand for 1990s.
- Gas to increase share of residential and industrial markets in B.C., Ont., Que. and continue dominant role in prairies. Gas consumption projected in N.S. and N.B. in 1988.
- Projection includes supply in Southern Basin, with east-coast production beginning in 1988, Beaufort production in 1992, and Arctic production in 1996.
- Deliverability of natural gas from all sources in Canada 120 billion cubic metres in 1990, 136 billion cubic metres in 2000.
- Balance suggests surplus producibility in excess of 45 billion cubic metres per year by 1990, could increase to surplus of 56 billion cubic metres in 2000.
- Southern Basic reserves alone could meet Canadian demand and authorized exports until after 2000.

### ● Modified December, 1980

- Potential effect of NEP not yet assessed, but lower deliverability expected and higher demand expected in Atlantic region in late 1980s.



dominant role in prairies. Gas consumption projected in N.S. and N.B. in 1988.

- Projection includes supply in Southern Basin, with east-coast production beginning in 1988, Beaufort production in 1992, and Arctic production in 1996.
- Deliverability of natural gas from all sources in Canada 120 billion cubic metres in 1990, 136 billion cubic metres in 2000.
- Balance suggests surplus producibility in excess of 45 billion cubic metres per year by 1990, could increase to surplus of 56 billion cubic metres in 2000.
- Southern Basic reserves alone could meet Canadian demand and authorized exports until after 2000.
- Modified December, 1980
- Potential effect of NEP not yet assessed, but lower deliverability expected and higher demand expected in Atlantic region in late 1980s.

Year

1971

1972

1973

1974

1975

1976

1977

1978

1979

1980

1981

1 Ex

2 19

3 19

avg

R

Wellhead

Less: Op

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for invest



**WORLD AND CANADIAN  
CRUDE OIL PRICE HISTORY**  
(\$ Cdn. per barrel at Jan. 1)

| Year | Arabian<br>Light <sup>1</sup> | U.S.<br>Average <sup>2</sup> | Canadian<br>Average <sup>3</sup> |
|------|-------------------------------|------------------------------|----------------------------------|
| 1971 | 1.40                          | 3.40                         | 3.15                             |
| 1972 | 1.80                          | 3.40                         | 3.15                             |
| 1973 | 2.00                          | 3.90                         | 3.26                             |
| 1974 | 8.25                          | 7.40                         | 3.80                             |
| 1975 | 10.40                         | 9.40                         | 6.50                             |
| 1976 | 11.60                         | 10.80                        | 8.00                             |
| 1977 | 12.20                         | 11.80                        | 9.75                             |
| 1978 | 14.00                         | 13.40                        | 11.75                            |
| 1979 | 15.90                         | 15.60                        | 12.75                            |
| 1980 | 30.30                         | 28.90                        | 14.75                            |
| 1981 | 37.90(E)                      | 35.50(E)                     | 17.75                            |

1 Excluding transportation costs.

2 1970-1973 reflects year average.

3 1970-1973 par crude at Edmonton, 1974-1981  
avg. Alberta wellhead prices.

**REVENUE SHARING — AVG. WESTERN OLD OIL**

|  | Before<br>Reinvestment |         | After<br>Reinvestment |         |
|--|------------------------|---------|-----------------------|---------|
|  | \$/m <sup>3</sup>      | \$/bbl. | \$/m <sup>3</sup>     | \$/bbl. |
| Wellhead price                             | 111.65                 | 17.75   | 111.65                | 17.75   |
| Less: Operating costs                      | 19.50                  | 3.10    | 19.50                 | 3.10    |
| Royalties and provincial taxes             | 51.26                  | 8.15    | 47.56                 | 7.56    |
| Petroleum and gas revenue tax              | 7.17                   | 1.14    | 7.17                  | 1.14    |
| Other federal taxes                        | 25.35                  | 4.03    | 16.54                 | 2.63    |
| Internal funds available<br>for investment | 8.37                   | 1.33    | 20.88                 | 3.32    |



# **GASOLINE PRICE HISTORY**

(Retail price of leaded regular gasoline in Toronto at Dec. 31)

|      | c/L  | c/gal. |
|------|------|--------|
| 1970 | 11.2 | 50.9   |
| 1971 | 11.6 | 52.9   |
| 1972 | 11.9 | 53.9   |
| 1973 | 13.0 | 58.9   |
| 1974 | 14.1 | 63.9   |
| 1975 | 17.8 | 80.9   |
| 1976 | 18.2 | 82.9   |
| 1977 | 19.1 | 86.9   |
| 1978 | 21.8 | 98.9   |
| 1979 | 24.7 | 112.1  |
| 1980 | 29.0 | 131.8  |

## **INTERNATIONAL RETAIL PRICE OF LEADED REGULAR GASOLINE (FULL-SERVICE OUTLETS)**

|                      | Date | c/L  | c/gal. |
|----------------------|------|------|--------|
| Toronto              | 3/81 | 31.6 | 143.4  |
| U.S. (average)       | 2/81 | 42.0 | 190.7  |
| Brazil (major city)  | 1/81 | 86.5 | 392.5  |
| Brussels             | 2/81 | 87.1 | 395.3  |
| Paris                | 2/80 | 82.2 | 373.1  |
| Milan                | 1/81 | 92.6 | 420.4  |
| Zurich               | 2/81 | 76.0 | 345.2  |
| London               | 2/81 | 73.6 | 334.1  |
| Melbourne            | 1/81 | 43.5 | 197.7  |
| Tokyo (unleaded)     | 1/81 | 77.6 | 352.2  |
| Bermuda (major city) | 1/81 | 61.0 | 277.0  |



# **GASOLINE PRICE HISTORY**

(Retail price of leaded regular gasoline in Toronto at Dec. 31)

|      | <b>c/L</b> | <b>c/gal.</b> |
|------|------------|---------------|
| 1970 | 11.2       | 50.9          |
| 1971 | 11.6       | 52.9          |
| 1972 | 11.9       | 53.9          |
| 1973 | 13.0       | 58.9          |
| 1974 | 14.1       | 63.9          |
| 1975 | 17.8       | 80.9          |
| 1976 | 18.2       | 82.9          |
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## **PETROLEUM PRODUCTS PROJECT**

### **STRATHCONA REFINERY EXPANSION (Edmonton, Alta.)**

- \$290 million
- increase capacity to 30 200 m<sup>3</sup>/d
- completion 1986.

## **ESSO CHEMICAL PROJECTS**

(participants, cost, capacity,  
completion target)

### **AMMONIA AND UREA FERTILIZER PLANT (Redwater, Alta.)**

- \$400 million (plus \$50 million for storage and handling facilities in Manitoba and Saskatchewan)
- 1.6 kt/d ammonia, 1.5 kt/d urea
- completion 1983.

### **LOW-DENSITY POLYETHYLENE PLANT (Sarnia, Ont.)**

- \$180 million
- 135 kt/yr.
- completion 1983.

### **PETALTA (Bruderheim, Alta.)**

- Esso Chemical 50%, Alberta Energy Co. Ltd. 50%
- benzene plant:
  - \$350 million
  - 317 kt/yr. benzene
- styrene plant:
  - \$300 million
  - 400 kt/yr. styrene monomer
- completion 1984.

### **PHOSPHATIC FERTILIZER EXPANSION (Redwater, Alta.)**

- \$53 million
- increase by 150 000 t/yr. to 600 000 t/yr.
- completion 1982.



## **ESSO MINERALS DEVELOPMENT PROJECTS**

(participants, reserves, completion target)

### **KUTCHO CREEK (B.C.)**

- Esso Minerals, Sumac Mines Ltd. negotiating joint venture
- 7 million tonnes ore — 1.82% copper, 2.70% zinc.

### **MIDWEST LAKE (Sask.)**

- Esso Minerals 50%, Numac Oil and Gas Ltd. 25%, Bow Valley Industries 12.5%, Mink Mining 6.25%, Midwest Mining 6.25%
- 26 million kg. uranium oxide
- completion 1986.

### **QUINTETTE (B.C.)**

- current — Esso Minerals 6%, Denison Mines Ltd. 43.3%, Tokyo Boeki 19.7%, Mitsui Mining Co. Ltd. 19.7%, Charbonnage de France 11.3%
- potential — Esso Minerals 16.75%, Denison Mines Ltd. 38.25%, Tokyo Boeki 17.5%, Mitsui Mining Co. Ltd. 17.5%, Charbonnage de France 10%
- 2.8 billion tonnes coal
- basic agreement signed for delivery of metallurgical coal to Japanese steel industry in 1983.

### **TROUT LAKE (B.C.)**

- Esso Minerals 45%, Newmont Mines Ltd. 55%
- preliminary drilling indicates .2 to .4% molybdenite.



## **ESSO MINERALS OPERATING MINES**

(production startup, capacity, reserves)

### **BYRON CREEK COLLIERIES (B.C.)**

(FIRA requires change to 50% Canadian ownership)

- current operation commenced 1978
- current production 1 million t/yr.
- high quality thermal bituminous coal
- plans for expansion underway.

### **GAYS RIVER (N.S.)**

- production commenced November, 1979
- design capacity 1360 t/d
- 4.7 million tonnes ore — 2.8% lead, 4.2% zinc.

### **GRANDUC (B.C.)**

- production commenced October, 1980
- design capacity 3600 t/d
- 6.7 million tonnes ore — 1.6% copper.



## METRIC CONVERSION

### Useful conversions (approximate)

#### Imperial to metric

|                                 |  |
|---------------------------------|--|
| 1 acre                          | = 0.405 hectares (ha)                  |
| 1 barrel (bbl.)                 | = 0.159 cubic metres (m <sup>3</sup> ) |
| 1 cubic foot (ft <sup>3</sup> ) | = 0.028 cubic metres                   |
| 1 gallon (gal.)                 | = 4.55 litres (L)                      |
| 1 mile (mi.)                    | = 1.6 kilometres (km)                  |
| 1 short ton                     | = 0.907 tonnes (t)                     |
| 1 long ton                      | = 1.016 tonnes                         |

#### Metric to imperial

|               |                   |
|---------------|-------------------|
| 1 cubic metre | = 6.29 barrels    |
|               | = 35.3 cubic feet |
| 1 hectare     | = 2.47 acres      |
| 1 kilometre   | = 0.62 miles      |
| 1 litre       | = 0.22 gallons    |
| 1 tonne       | = 1.1 short tons  |
|               | = 0.98 long tons  |



RG 4388